PC-586U(PC)

Single Board Computer for PICMG

User's Guide

CONTEC

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CAUSION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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Introduction

This manual is designed to give you information on the PC-586U(PC) CPU card. It is divided into the following sections:

Checklist 2
Description 2
Features 3
Specifications 3
Intelligence 5
Board Dimensions and Layout 6

The topics covered in this chapter are as follows:

- Checklist
- Description
- Features
- Specifications
- Layout of Key Components and Dimensions

Checklist

Please check that your package is complete and contains the items below. If you discover damaged or missing items, please contact your dealer.

- The PC-586U(PC) Industrial CPU Card
- This User's Manual
- 1 IDE Ribbon Cable
- 1 Floppy Ribbon Cable
- 1 Key Board Exchange Cable
- 1 Mounting Bracket with 1 Serial Port Ribbon Cable and 1 Parallel Port Ribbon Cables
- 1 Mounting Bracket with 1 Serial Port Ribbon Cable
- 1 Diskette Containing Intel PCI IDE Driver and Flash Memory Utility
- 1 Diskette Containing System Monitor
- 2 Diskettes Containing C&T 69000 VGA Driver
- 2 Diskettes Containing Realtek RTL8139A LAN Driver
- 4 Diskettes Containing Symbios 53C875E SCSI Drivers (SCSI model only)
- 1 Mounting Bracket with SCSI Ribbon Cable (SCSI model only)
- 1 SCSI Terminator (SCSI model only)

Description

The PC-586U(PC) is a PCI Pentium Industrial CPU card based on Intel's 430TX chipset and is fully designed for harsh industrial environment. It features ZIF Socket 7 compatible with various processors from Intel, AMD and Cyrix. This card accommodates up to 256MB of SDRAM memory and a secondary level 512KB cache.

The PC-586U(PC) comes with onboard CPU temperature sensor to protect your processor from overheating. The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen and stopping the HDD spindle motor.

Features

- CPU Speed 90~333MHz, Intel P54C, P55C/MMX, Cyrix 6x86, 6x86L, 6x86MX, AMD K5, K6, K6-2
- Intel 430TX PCIset
- Up to 256MB system memory
- Onboard C&T PCI VGA controller
- Onboard Symbios 53C875E Ultra Wide SCSI controller (SCSI model)
- Onboard Realtek RTL8139A Ethernet controller
- 16 level programmable watchdog timer
- High speed bi-directional SPP/ECP/EPP parallel port
- Hardware Monitoring (Winbond W83781D)

Specifications

- **Processor Socket**: ZIF Socket 7
- **Processor**:
  Intel Pentium/P55C* 90/100/120/133/150/166/200/233/266
  Cyrix 6x86/6x86L P150+/P166+
  Cyrix 6x86MX-166/180/200
  AMD K5 PR90/PR100/PR133/PR166
  AMD K6-166/200/233
  AMD K6-2 266/300/333/366/400
- **Chipset**: Intel 430TX PCIset with built-in PCI EIDE
- **Secondary Cache**: 512KB P.B. SRAM
- **Memory**: Up to 256MB SDRAM/EDO DRAM
- **Memory Sockets**: Two 168-pin DIMM sockets for SDRAMs in 8MB, 16MB, 32MB, 64MB, 128MB and 256MB configurations.
- **BIOS**: Award BIOS, PnP support
  - FLASH EEPROM (256KB) for BIOS update
  - ISA Plug and Play (PnP) extension
  - Power management

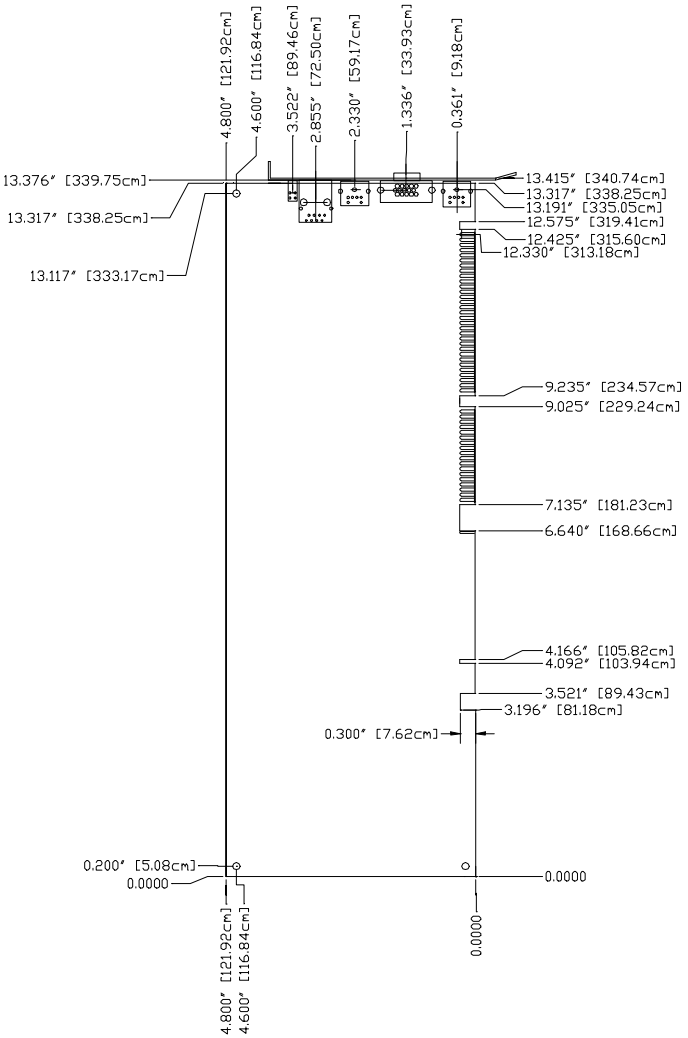
- **Super I/O**: Winbond 83977TF chipset
- **Parallel Port**: One high-speed parallel port, SPP/EPP/ECP mode
- **Serial Port**: Two 16550 UART compatible RS-232C/422/485 ports; Max. baud rate at 115kbps
- **Enhanced IDE**: Two Bus Mastering EIDE mode, up to 4 devices, Two EIDE interfaces for up to four devices, support PIO Mode 3/4 or Ultra DMA/33 IDE Hard Disk and ATAPI CD-ROM.
- **FDD Interface**: Two floppy drives (360KB, 720KB, 1.2MB, 1.44MB, 2.88MB, LS-120)
- **USB Interface**: Two USB pin-header connectors, compliant with USB Specification Rev. 1.0
- **Watchdog Timer**: 16-level, programmable
  - I/O port 0443H to enable watchdog.
  - I/O port 0441H to disable watchdog.
  - Time-out timing select 0/2/4/6/8/10/12/14/16/18/20/22/ 24/26/28/30 seconds (+/-20%).
- **Green Function**: Power management via BIOS, activated through mouse/keyboard movement
- **Keyboard Connector**: PC/AT type mini-DIN that supports PC/AT; supports a 5-pin external keyboard connector
- **IrDA Interface**: Pin-header connector for the optional IrDA external connector
- **VGA Display**:
  C&T 69000 VGA chip onboard
  SVGA for CRT & Panel
  32-bit PCI local bus
  VGA BIOS with 256KB flash ROM and system BIOS
  15-pin connector
  1280 x 1024 (256 colors) resolution on SVGA (2MB memory)
  68-pin connector for LCD panel, 1280 x 1024 resolution
  LCD panel supports monochrome, color STN, TFT, EL
  Simultaneous VGA and panel display

- **LAN**: Realtek RTL8139A Ethernet controller supporting 10Mb/s and 100Mb/s N-way auto negotiation operation
- **SCSI**: Symbios 53C875E Ultra Wide SCSI controller for data transfer rate of up to 40MB/s
- **SDD**: One socket for M-systems Disk on chip is available . Up to 144Mbyte
- **Environmental and Mechanical**:
  - **Power Supply**: 5A(typ.) @+5V (MMX-266) , 200mA(typ.) @+12V
  - **Temperature**: 0°C to 60°C
  - **Humidity**: 20% to 90% (No condensation)
  - **Suspend dust**: Not excessive
  - **Corrosive gas**: Must not be present
  - **Dimensions**: 338mm x 122mm
  - **Weight**: 450g

Intelligence

- **CPU Slow Down**: When system overheat is detected, CPU slows down to prevent CPU damage. The CPU speed is restored when temperature falls to a safe level. System overheat is usually caused by malfunctioning of the CPU or system fan.
- **Temperature Monitoring and Alert**: A sensor for the CPU temperature on the PC-586U(PC) monitors the CPU temperature and alerts the user through the speaker when temperature exceeds the safe heat level.

Board Dimensions and Layout



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Installations

This chapter provides information on how to use the jumpers and connectors on the PC-586U(PC) in order to set up a workable system. The topics covered are:

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Memory Installation 9
Jumpers on the PC-586U(PC) 10
Connectors on the PC-586U(PC) 24
Watchdog Timer Configuration 39

CPU Installation

The PC-586U(PC) Industrial CPU Card supports a ZIF processor socket for Pentium-level processors.

Unlike PGA sockets, ZIF (Zero Insertion Force) sockets come with a lever to secure the processor. Make sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket.

After you have installed the processor into the ZIF socket, check if the jumpers for the CPU type and speed are correct.

NOTE: Ensure that the CPU heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause your system to hang or be unstable.

Memory Installation

The PC-586U(PC) Industrial CPU Card supports two 168-pin DIMM sockets for a maximum total memory of 256MB. The DRAMs (3.3Volts) for the DIMM sockets can be 8MB, 16MB, 32MB, 64MB, 128 and 256MB in EDO and SDRAM types. When populating the DIMM sockets, either of the DIMM sockets can be populated first.

(DIMM1)	(DIMM2)	Total Memory
8MB	-----	8MB
16MB	-----	16MB
32MB	-----	32MB
64MB	-----	64MB
128MB	-----	128MB
8MB	8MB	16MB
16MB	8MB	24MB
32MB	8MB	40MB
64MB	8MB	72MB
128MB	8MB	136MB
16MB	16MB	32MB
32MB	16MB	48MB
64MB	16MB	80MB
128MB	16MB	144MB
32MB	32MB	64MB
64MB	32MB	96MB
128MB	32MB	160MB
64MB	64MB	128MB
128MB	64MB	192MB
128MB	128MB	256MB
256MB	-----	256MB
-----	256MB	256MB

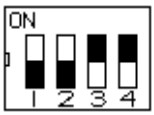
Jumpers on the PC-586U(PC)

The jumpers on the PC-586U(PC) allow you to configure your CPU card according to the needs of your applications. If you have doubts about the best jumper configuration for your needs, contact your dealer or sales representative. The following table lists the connectors on PC-586U(PC) and their respective functions.

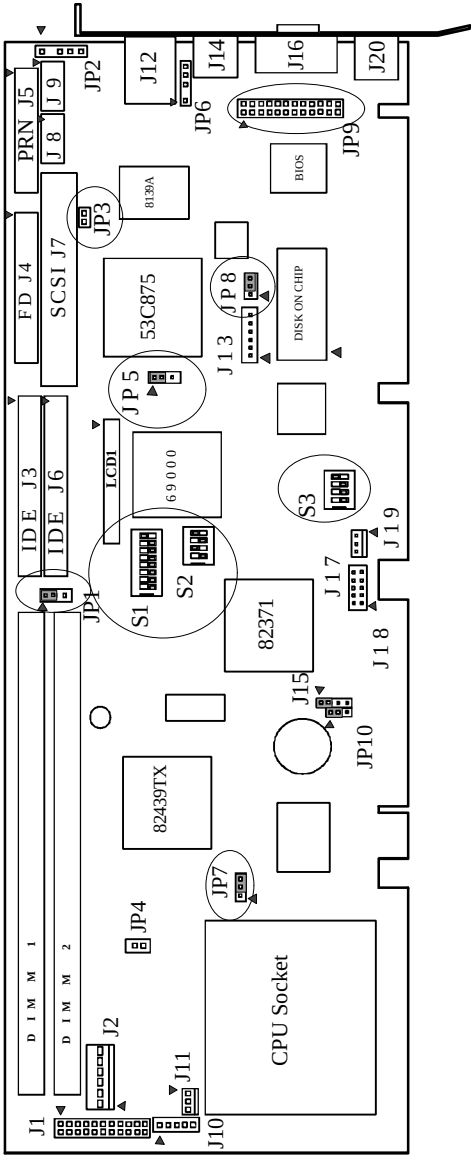
Jumper Locations on the PC-586U(PC)..... 11
S1: Bus Speed / Multiplier Setting..... 12
S3 (1-4), JP7, JP4: CPU Voltage Selector..... 13
Setting CPU Frequency & CPU Voltage..... 15
S2: Display Type Setting..... 18
JP1: LCD Power Setting..... 20
JP3: SCSI Terminator Setting..... 20
JP5: Watchdog Generator Selection..... 20
JP7: CPU VIO Voltage Setting..... 21
JP8: Disk On Chip Setting..... 21
JP9: RS-232C/422/485 (COM2) Selection..... 22
JP10: Clear CMOS Content..... 23
J15: External Battery Connector..... 23

The following examples show the conventions used in this section.

	Jumper Open
	Jumper Closed

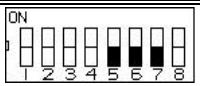
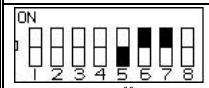
	Switch 1 and switch 2 are set to OFF. Switch 3 and switch 4 are set to ON.

Jumper Locations on the PC-586U(PC)



S1: Bus Speed / Multiplier Setting

S1(1-4)	Bus Speed
 on on off off xx xx xx xx	60MHz
 off off off off xx xx xx xx	66MHz

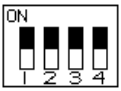
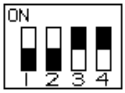
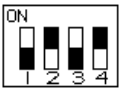
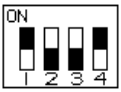
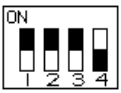
S1(5-7)	Multiplier	S1(5-7)	Multiplier
 xx xx xx xx off off off xx	1.5x/3.5x	 xx xx xx xx on off on xx	4x
 xx xx xx xx on off off xx	2x/6x	 xx xx xx xx on on on xx	4.5x
 xx xx xx xx on on off xx	2.5x	 xx xx xx xx off on on xx	5x
 xx xx xx xx off on off xx	3x	 xx xx xx xx off off on xx	5.5x

S3 (1-4), JP7, JP4: CPU Voltage Selector

For Single Voltage CPU*
Intel P54C, Cyrix 6x86, AMD K5, IDT C6

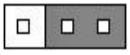
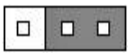
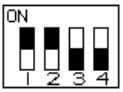
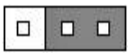
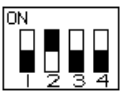
VIO	VCORE	S3 (1-4)	JP4
3.5V	3.5V	on on on on	OPEN

For Dual Voltage CPU
Intel P55C, Cyrix 6x86L/MX, AMD K6/K6-2**

JP7	VIO	VCORE	S3 (1-4)	JP4	CPU
	3.3V	3.5V	 on on on on	OPEN	WinChip 2-3D (0.35u)
	3.3V	3.2V	 off off on on	OPEN	K6-233 (0.35u)
	3.3V	3.0V	 off on off on	OPEN	
	3.3V	2.9V	 on off off on	OPEN	K6-166/200 6x86MX
	3.3V	2.8V	off off off on	OPEN	WinChip 2-3D (0.35u) P55C 6x86L
	3.3V	2.7V	 on on on off	OPEN	

*** P55C = Pentium MMX*

For Dual Voltage CPU
Intel P55C, Cyrix 6x86L/MX, AMD K6/K6-2

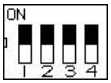
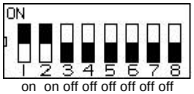
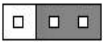
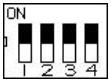
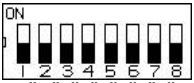
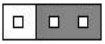
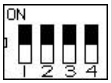
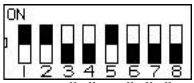
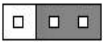
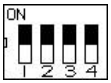
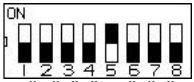
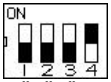
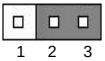
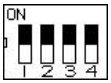
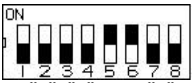
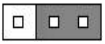
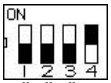
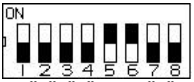
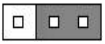
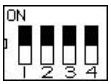
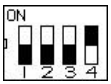
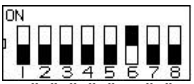
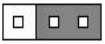
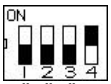
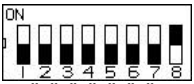
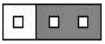
JP7	VIO	VCORE	S3 (1-4)	JP4	CPU
 1 2 3	3.3V	2.6V	off on on off	OPEN	
1 2 3	3.3V	2.5V	on off on off	OPEN	
1 2 3	3.3V	2.4V	off off on off	OPEN	
 1 2 3	3.3V	2.3V	 on on off off	OPEN	
 1 2 3	3.3V	2.2V	 off on off off	OPEN	K6, K6-2 (0.35u)

For Dual Voltage CPU
Intel 266MHz (0.25micron)

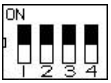
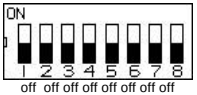
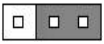
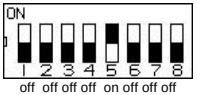
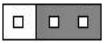
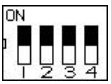
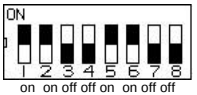
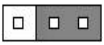
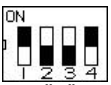
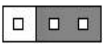
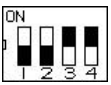
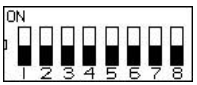
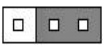
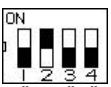
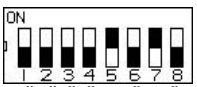
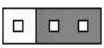
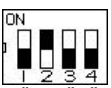
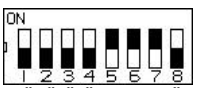
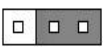
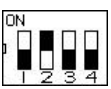
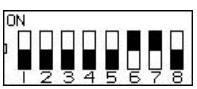
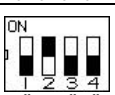
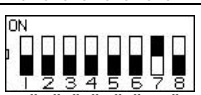
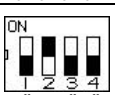
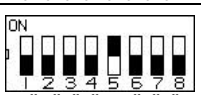
JP7	VIO	VCORE	S3 (1-4)	JP4
1 2 3	2.5V	1.9V	off off on on	SHORT

Setting CPU Frequency & CPU Voltage

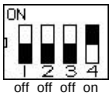
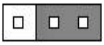
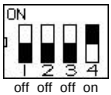
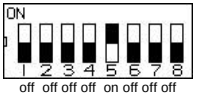
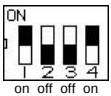
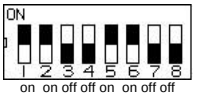
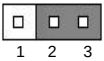
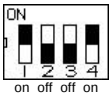
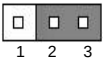
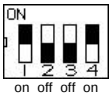
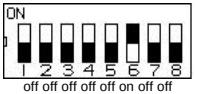
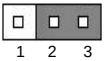
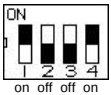
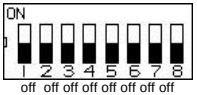
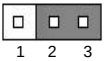
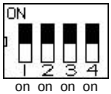
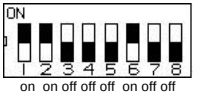
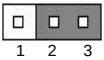
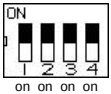
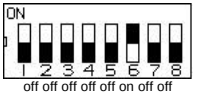
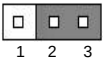
For Intel Pentium CPU

CPU	S3 (1-4)	S1 (1-8)	JP7	JP4
P54C-90				
P54C-100				
P54C-120				
P54C-133				
P54C-150				
P54C-166				
P55C-166				
P54C-200				
P55C-200				
P55C-233				

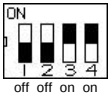
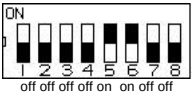
For AMD K5/K6/K6-2 CPU

CPU	S3 (1-4)	S1 (1-8)	JP7	JP4
K5-PR100 (100MHz)				
K5-PR133 (133MHz)				
K5-PR166 (116.7MHz) (117.K6/166)				
K6/200				
K6/233				
K6/266 K6-2/266				
K6/300 K6-2/300				
K6/333 K6-2/333				
366MHz				
400MHz				

For Cyrix 6x86 and IDT C6 CPU

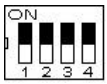
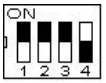
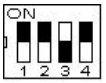
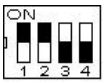
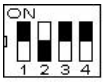
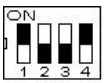
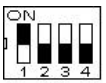
CPU	S3 (1-4)	S1 (1-8)	JP7	JP4
6x86(L)-P150+ (120MHz)				
6x86(L)-P166+ (133MHz)				
6x86MX-PR166				
6x86MX-PR200				
6x86MX-PR233				
6x86MX-PR300				
IDT C6-180				
IDT C6-200				

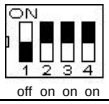
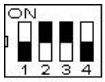
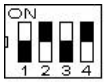
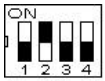
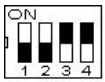
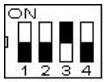
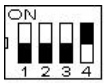
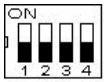
For Intel 55C (0.25u) 266MHz

CPU	S3 (1-4)	S1 (1-8)	JP7	JP4
P55C-266MHz				

S2: Display Type Setting

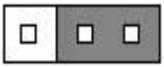
The PC-586U(PC) supports several resolution LCD displays. Use S2 switch to select display type.

S2(1-4)	LCD Type	Resolution	CONTEC Products
	Reserved	---	---
	STN	1024 x 768 XGA	---
	Reserved	---	---
	TFT	640 x 480	---
	Reserved	---	---
	STN	640 x 480	---
	Reserved	---	---
	TFT	1024 x 768 XGA	IPC-DT/H40X(PC)T

S2(1-4)	LCD Type	Resolution	CONTEC Products
	Reserved	---	---
	TFT	1280 x 1024 SXGA	---
	CRT only	VGA SVGA XGA SXGA	---
	TFT	640 x 480	IPC-DT/M30(PC)T IPC-DT/S35(PC) IPC-DT/S35(PC)T
	Reserved	---	---
	STN	800 x 600	IPC-DS/L30S(PC)T IPC-DS/L400(PC)T IPC-DS/L400(PC)
	Reserved	---	---
	TFT	800 x 600	IPC-DT/L30S(PC)T IPC-DT/L400(PC)T IPC-DT/L400(PC) IPC-DT/L40S(PC)T

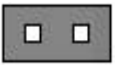
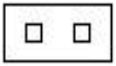
JP1: LCD Power Setting

The PC-586U(PC) XGA interface supports 5V and 3.3V LCD displays. Use JP1 to change between 5V and 3.3V panel video signal level.

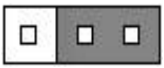
JP1	Setting	Function
	Pin 1-2 Short/Closed	3.3V
	Pin 2-3 Short/Closed	5V

JP3: SCSI Terminator Setting

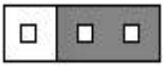
Use JP3, a 2-pin header, to enable or disable the terminator of the Ultra Wide SCSI on board.

JP3	Setting	Function
	Short/Closed	Disabled
	Open	Enabled

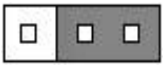
JP5: Watchdog Generator Selection

JP5	Setting	Function
	Pin 1-2 Short/Closed	NMI
	Pin 2-3 Short/Closed	Reset Normal Operation

JP7: CPU VIO Voltage Setting

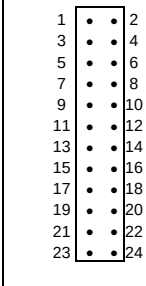
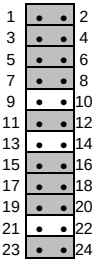
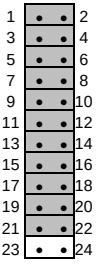
JP7	Setting	Function
	Pin 1-2 Short/Closed	2.5V
	Pin 2-3 Short/Closed	3.3V

JP8: Disk On Chip Setting

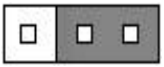
JP8	Setting	Function
	Pin 1-2 Short/Closed	D0000-D7FFF
	Pin 2-3 Short/Closed	D8000-DFFFF (Default)

JP9: RS-232C/422/485 (COM2) Selection

COM2 is selectable for RS-232C, RS-422 and RS-485.
The following table describes the jumper settings of this connector.

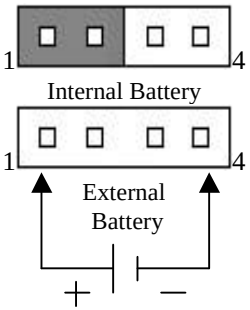
COM2 Function	RS-232C	RS-422	RS-485
Jumper Setting (Pin closed)	All Jumpers Open	1-2 3-4 5-6 7-8 11-12 15-16 17-18 19-20 23-24	1-2 3-4 5-6 7-8 9-10 11-12 13-14 15-16 17-18 19-20 21-22
Jumper Illustration			

JP10: Clear CMOS Content

JP10	Setting	Function
	Pin 2-3 Short/Closed	Clear CMOS Content
	Pin 1-2 Short/Closed	Normal Operation (Default)

J15: External Battery Connector

This 4-pin connector allows the user to connect an external battery to maintain the information stored in the CMOS RAM in case the built-in battery malfunctions. The default is set to Internal Battery with a jumper connecting pin 1 and pin 2.



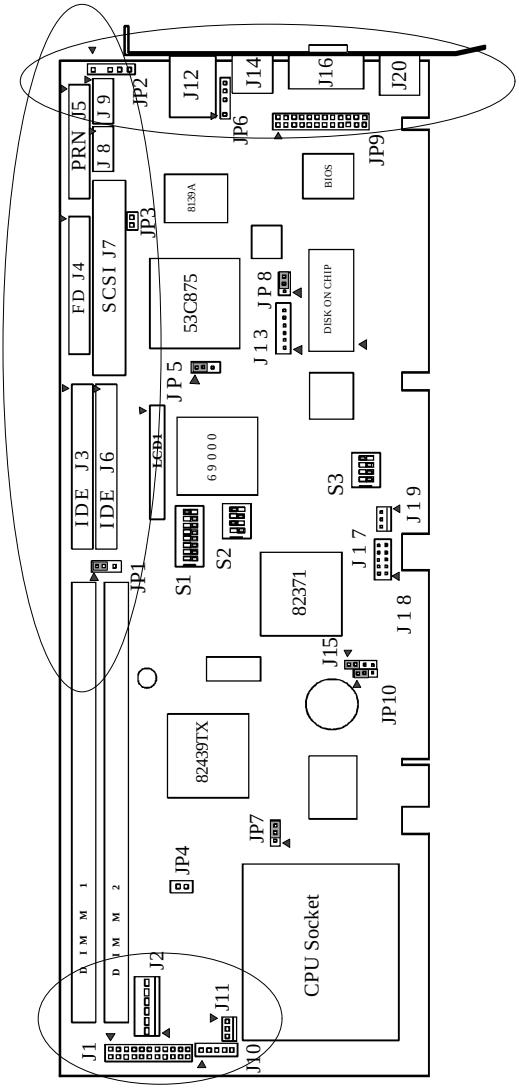
J15 Pin #	Signal Name
1	Ground
2	Internal Battery GND
3	N.C.
4	External Battery Vcc

Connectors on the PC-586U(PC)

The connectors on the PC-586U(PC) allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on PC-586U(PC) and their respective functions.

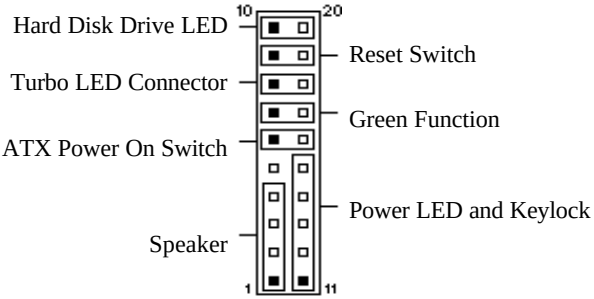
Connector Locations on the PC-586U(PC) 25
J1: Front Bezel Connector 26
J2: Power Connector 28
JP2: IrDA Connector 28
J3, J6: EIDE Connectors 29
J4: Floppy Drive Connector 30
J5: Parallel Port Connector 30
J7: Ultra Wide SCSI Connector 31
J8: COM1 Serial Port 32
J9: COM2 Serial Port 32
J10: External Keyboard Connector 33
J11: CPU Fan Power Connector 33
J12: RJ45 Connector 33
J13: External ATX Power Connector 33
J14: PS/2 Mouse Connector 35
JP6: External PS/2 Mouse Connector 35
J16: VGA CRT Connector 35
LCD1: LCD Panel Connector 36
J17, J18: USB Connectors 37
J19: Chassis Fan Power Connector 37
J20: PS/2 Keyboard Connector 37
LED1: SCSI LED 38
LED2, LED3: LAN Activity LED 38

Connector Locations on the PC-586U(PC)



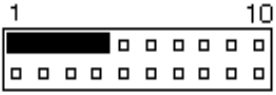
J1: Front Bezel Connector

The front bezel of the case has a control panel providing light indication of the computer activities and switches to change the computer status. J1 is a 20-pin header that provides interfaces for the following functions.



Speaker: Pins 1 - 4

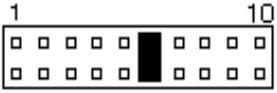
This connector provides an interface to a speaker for audio tone generation. An 8-ohm speaker is recommended.



J1 Pin #	Signal Name
1	Speaker out
2	N.C.
3	Ground
4	+5V

ATX Power On Switch: Pins 6 and 16

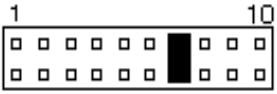
This is an "ATX Power Supply On/Off Switch" that is connected to the power switch on the case.



J1 Pin #	Signal Name
6	Ground
16	Switch

Green Function: Pins 7 and 17

This connector is for the "Green Switch" on the control panel, which, when pressed, will force the motherboard immediately into the power saving (sleep) mode.



J1 Pin #	Signal Name
7	Ground
17	Sleep

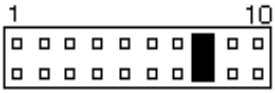
Power LED and Keylock: Pins 11 - 15

The power LED indicates the status of the main power switch. The keylock switch, when closed, will disable the keyboard function.

J1 Pin #	Signal Name
11	Power LED
12	N.C.
13	Ground
14	Keylock
15	Ground

Turbo LED Connector: Pins 8 and 18

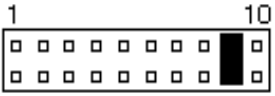
There is the no turbo/deturbo function on the CPU card. The Turbo LED on the control panel will always be on when attached to this connector.



J1 Pin #	Signal Name
8	5V
18	Ground

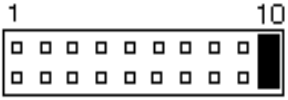
Reset Switch: Pins 9 and 19

The reset switch allows the user to reset the system without turning the main power switch off and then on. Orientation is not required when making a connection to this header.



Hard Disk Drive LED Connector: Pins 10 and 20

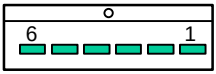
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



J1 Pin #	Signal Name
10	HDD LED
20	5V

J2: Power Connector

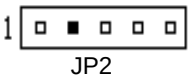
When using an AT compatible power supply, plug the power supply connectors into J2. Make sure the power supply connectors are connected in the right orientation. See the pin assignments below.



Pin #	Signal Name	Pin #	Signal Name
1	Power Good	4	-12V
2	+5V	5	Ground
3	+12V	6	Ground

JP2: IrDA Connector

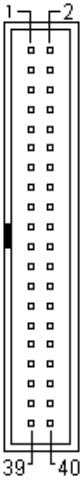
This connector is used for an IrDA connector for wireless communication.



JP2 Pin #	Signal Name
1	+5V
2	N.C.
3	Ir RX
4	Ground
5	Ir TX

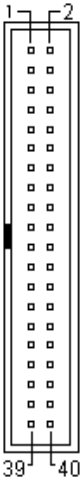
J3, J6: EIDE Connectors

J3 is the *primary* IDE connector and J6 is the *secondary* IDE connector.



J3

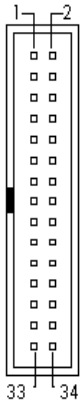
Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	N.C.
DRQ	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK	29	30	Ground
IRQ	31	32	N.C.
Address 1	33	34	N.C.
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground



J6

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	N.C.
DRQ	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK	29	30	Ground
IRQ	31	32	N.C.
Address 1	33	34	N.C.
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

J4: Floppy Drive Connector

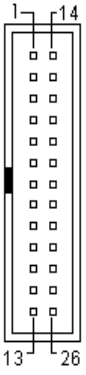


J4

Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	RM/LC
Ground	3	4	N.C.
Ground	5	6	N.C.
Ground	7	8	Index
Ground	9	10	Motor enable 0
Ground	11	12	Drive select 1
Ground	13	14	Drive select 0
Ground	15	16	Motor enable 1
Ground	17	18	Direction
Ground	19	20	Step
Ground	21	22	Write data
Ground	23	24	Write gate
Ground	25	26	Track 00
Ground	27	28	Write protect
Ground	29	30	Read data
Ground	31	32	Side 1 select
Ground	33	34	Diskette change

J5: Parallel Port Connector

The following table describes the pin out assignments of this connector.

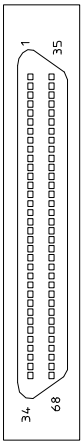


J5

Signal Name	Pin #	Pin #	Signal Name
Line printer strobe	1	14	AutoFeed
PD0, parallel data 0	2	15	Error
PD1, parallel data 1	3	16	Initialize
PD2, parallel data 2	4	17	Select
PD3, parallel data 3	5	18	Ground
PD4, parallel data 4	6	19	Ground
PD5, parallel data 5	7	20	Ground
PD6, parallel data 6	8	21	Ground
PD7, parallel data 7	9	22	Ground
ACK, acknowledge	10	23	Ground
Busy	11	24	Ground
Paper empty	12	25	Ground
Select	13	N/A	N/A

J7: Ultra Wide SCSI Connector

The table below shows the pin-out assignments of this 68-pin connector.

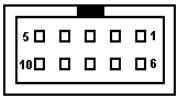


J7

Signal Name	Pin #	Pin #	Signal Name
GROUND	1	35	SEDAT12
GROUND	2	36	SEDAT13
GROUND	3	37	SEDAT14
GROUND	4	38	SEDAT15
GROUND	5	39	SEDPH
GROUND	6	40	SEDAT0
GROUND	7	41	SEDAT1
GROUND	8	42	SEDAT2
GROUND	9	43	SEDAT3
GROUND	10	44	SEDAT4
GROUND	11	45	SEDAT5
GROUND	12	46	SEDAT6
GROUND	13	47	SEDAT7
GROUND	14	48	SEDPL
GROUND	15	49	GROUND
GROUND	16	50	SEWIN#
LVTRMPWR	17	51	LVTRMPWR
LVTRMPWR	18	52	LVTRMPWR
N.C.	19	53	N.C.
GROUND	20	54	GROUND
GROUND	21	55	SEATN
GROUND	22	56	GROUND
GROUND	23	57	SEBSY
GROUND	24	58	SEACK
GROUND	25	59	SERST
GROUND	26	60	SEMSG
GROUND	27	61	SESEL
GROUND	28	62	SECD
GROUND	29	63	SEREQ
GROUND	30	64	SEIO
GROUND	31	65	SEDAT8
GROUND	32	66	SEDAT9
GROUND	33	67	SEDAT10
GROUND	34	68	SEDAT11

J8: COM1 Serial Port

J8, a 10-pin header, is an onboard serial ports of the PC-586U(PC)The following table shows the pin assignments of this connector.

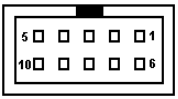


J8

Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	Ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator

J9: COM2 Serial Port

J9, a 10-pin header connector , is the onboard COM2 serial port of the PC-586U(PC). The following table shows the pin assignments of this connectors.



J9

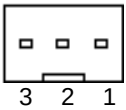
Pin #	Signal Name		
	RS-232C	**R2-422**	**RS-485**
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	N.C.
4	DTR	RX-	N.C.
5	GND	GND	GND
6	DSR	RTS-	N.C.
7	RTS	RTS+	N.C.
8	CTS	CTS+	N.C.
9	RI	CTS-	N.C.
10	N.C.	N.C.	N.C.

J10: External Keyboard Connector

J10 Pin #	Signal Name
1	Keyboard clock
2	Keyboard data
3	N.C.
4	Ground
5	Vcc

J11: CPU Fan Power Connector

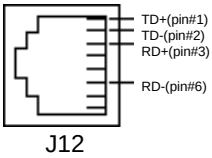
J11 is a 3-pin header for the CPU fan power connector. The fan must be a 12V fan.



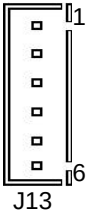
Pin #	Signal Name
1	Fan sensor
2	+12V
3	Ground

J12: RJ45 Connector

This connector is for the 10/100Mbps Ethernet capability of the CPU card. The figure below shows the pin out assignments of this connector and its corresponding input jack.

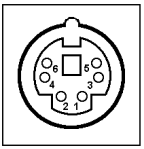


J13: External ATX Power Connector



J13 Pin #	Signal Name
1	N.C.
2	Ground
3	N.C.
4	Ground
5	PS-ON (soft on/off)
6	5V SB (standby +5V)

J14: PS/2 Mouse Connector



J14

J14 Pin #	Signal Name
1	Mouse data
2	N.C.
3	Ground
4	5V
5	Mouse clock
6	N.C.

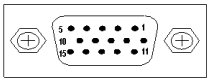
JP6: External PS/2 Mouse Connector

JP6

JP6 Pin #	Signal Name
1	Mouse data
2	N.C.
3	Ground
4	5V
5	Mouse clock

J16: VGA CRT Connector

J16 is a 15-pin VGA CRT connector. The pin assignments are as follows:

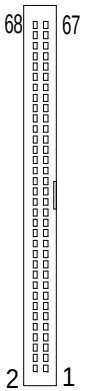


J16

Signal Name	Pin	Pin	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
N.C.	11	12	N.C.
HSYNC	13	14	VSYNC
N.C.	15		

LCD1: LCD Panel Connector

LCD1 is a 68-pin (dual in line header) for flat panel LCD displays. The following shows the pin assignments of this connector.

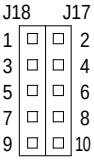


LCD1

Signal Name	Pin #	Pin #	Signal Name
12V	1	2	12V
GND	3	4	GND
5V/3.3V	5	6	5V/3.3V
5V/3.3V	7	8	5V/3.3V
PD0	9	10	PD1
PD2	11	12	PD3
PD4	13	14	PD5
GND	15	16	GND
PD6	17	18	PD7
PD8	19	20	PD9
PD10	21	22	PD11
GND	23	24	GND
PD12	25	26	PD13
PD14	27	28	PD15
PD16	29	30	PD17
GND	31	32	GND
PD18	33	34	PD19
PD20	35	36	PD21
PD22	37	38	PD23
GND	39	40	GND
PD24	41	42	PD25
PD26	43	44	PD27
PD28	45	46	PD29
GND	47	48	GND
PD30	49	50	PD31
PD32	51	52	PD33
PD34	53	54	PD35
GND	55	56	SHFCLK
GND	57	58	LP
GND	59	60	FLM
GND	61	62	M
GND	63	64	ASCLK
GND	65	66	ENABKL
ENAVDD	67	68	ENAVEE

J17, J18: USB Connectors

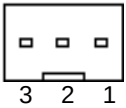
J17 and J18 are USB connectors that supports up to 127 USB devices. The following table shows the pin outs of these connectors.



J18 Pin #	Signal Name	J17 Pin #	Signal Name
1	Vcc	2	Vcc
3	USB-	4	USB-
5	USB+	6	USB+
7	Ground	8	Ground
9	Ground	10	N.C.

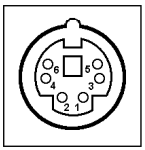
J19: Chassis Fan Power Connector

J19 is a 3-pin header for the chassis fan power connector. The fan must be a 12V fan.



Pin #	Signal Name
1	Fan sensor
2	+12V
3	Ground

J20: PS/2 Keyboard Connector



J20

J20 Pin #	Signal Name
1	Keyboard data
2	N.C.
3	Ground
4	5V
5	Keyboard clock
6	N.C.

LED1: SCSI LED

LED1 indicates any activity on the SCSI interface.

LED2, LED3: LAN Activity LED

LED2 and LED3 are light indicators for Link and Data Transfer Activity respectively for the onboard LAN function.

Watchdog Timer Configuration

The function of the watchdog timer is to reset the system automatically and is defined at I/O port 0443H. To enable the watchdog timer and allow the system to reset, write I/O port 0443H. To disable the timer, write I/O port 0441H for the system to stop the watchdog function. The timer has a tolerance of 20% for its intervals.

The following describes how the timer should be programmed.

Enabling Watchdog:

```
MOV    AX, 000FH (Choose the values from 0 to F)
MOV    DX, 0443H
OUT    DX, AX
```

Disabling Watchdog

```
MOV    AX, 000FH (Any value is fine.)
MOV    DX, 0441H
OUT    DX, AX
```

WATCHDOG TIMER CONTROL TABLE

Level	Value	Time/sec	Level	Value	Time/sec
1	F	0	9	7	16
2	E	2	10	6	18
3	D	4	11	5	20
4	C	6	12	4	22
5	B	8	13	3	24
6	A	10	14	2	26
7	9	12	15	1	28
8	8	14	16	0	30

3

BIOS Configuration

This chapter describes the different settings available in the Award BIOS that comes with the PC-586U(PC) CPU card. The topics covered in this chapter are as follows:

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BIOS Introduction

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel/Cyrix/AMD processors in a standard IBM-AT compatible I/O system. The BIOS provides critical low-level support for standard devices such as disk drives, serial and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST(Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press  <DEL>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

ROM PCI/ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Time, Date, Hard Disk Type	

The section below the setup items of the Main Menu displays the control keys for this menu. Another section at the bottom of the Main Menu just below the control keys section displays information on the currently highlighted item in the list.

NOTE: After making and saving system changes with Setup, you find that your computer cannot boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default.

We strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability.

Standard CMOS Setup

"Standard CMOS Setup" choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the Industrial CPU Card is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

ROM PCI/ISA BIOS
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : **Mon**, Aug 19 1996
Time (hh:mm:ss) : 00 : 00 : 00

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	Auto	0	0	0	0	0	0	Auto
Primary Slave	None	0	0	0	0	0	0	-----
Secondary Master	None	0	0	0	0	0	0	-----
Secondary Slave	None	0	0	0	0	0	0	-----

Drive A	: 1.44M, 3.5in	Base Memory	: 640K
Drive B	: None	Extended Memory	: 15360K
Floppy 3 Mode Support	: Disabled	Other Memory	: 384K
Video	: EGA / VGA		
Halt On	: All Errors	Total Memory	: 16384K

ESC : Quit
F1 : Help
↑ ↓ → ← : Select Item
PU / PD / + / - : Modify
(Shift) F2 : Change Color

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date

The date format is:

Day : **Sun to Sat**
Month : **1 to 12**
Date : **1 to 31**
Year : **1994 to 2097**

To set the date, highlight the "Date" field and use the PageUp/ PageDown or +/- keys to set the current time.

Time

The time format is: **Hour : 00 to 23**
Minute : 00 to 59
Second : 00 to 59

To set the time, highlight the "Time" field and use the <PgUp>/ <PgDn> or +/- keys to set the current time.

Primary HDDs / Secondary HDDs

The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first is the "Master" and the second is the "Slave".

To enter the specifications for a hard disk drive, you must select first a "Type". There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to 45 are predefined. Type "User" is user-definable. For the Primary Master/Slave as well as Secondary Master/Slave, you can select "Auto" under the TYPE and MODE fields. This will enable auto detection of your IDE drives and CD-ROM drive during POST.

Press <PgUp>/<PgDn> to select a numbered hard disk type or type the number and press the <Enter> key. The hard disk will not work properly if you enter incorrect information for this field. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually. If you select Type User, related information is asked to be entered to the following items.

CYLS :	Number of cylinders
HEAD :	Number of read/write heads
PRECOMP :	Write precompensation
LANDZ :	Landing zone
SECTOR :	Number of sectors
SIZE :	Automatically adjust according to the configuration
MODE (for IDE HDD only) :	Auto
	Normal (HD < 528MB)
	Large (for MS-DOS only)
	LBA (HD > 528MB and supports Logical Block Addressing)

NOTE: The specifications of your drive must match with the drive table. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

Drive A / Drive B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB	1.2MB	720KB	1.44MB	2.88MB
5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Floppy 3 Mode Support

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5-inch diskette. You have four options to choose:

Disabled	No 3 mode floppy drive installed. (default)
Drive A	Installed 3 mode drive at drive A.
Drive B	Installed 3 mode drive at drive B.
Both	Installed 3 mode drive at drive A and B.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters.(default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA, includes high resolution monochrome adapters.

Halt On

This field determines whether the system will halt if an error is detected during power up.

No errors	The system boot will not be halted for any error that may be detected. (default)
All errors	Whenever the BIOS detects a non-fatal error, the system will be halted and you will be prompted.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a keyboard or disk error; it will stop for all other errors.

BIOS Features Setup

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

ROM / PCI ISA BIOS
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	**: Disabled**	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Security Option	: Setup		
PCI /VGA Palette Snoop	: Disabled		
OS Select For DRAM>64MB	: Non-OS2		

ESC : Quit	↑ ↓ → ← : Select Item
F1 : Help	PU/PD/+/- : Modify
F5 : Old Values	(Shift) F2 : Color
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

Virus Warning

This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

NOTE: Many disk diagnostic programs which attempt to access the boot sector table can cause the virus warning. If you will run such a program, disable the Virus Warning feature.

CPU Internal Cache / External Cache

These items allow you to enable (speed up memory access) or disable the cache function. By default, these items are ***Enabled***.

Quick Power On Self Test

This choice speeds up the Power On Self Test (POST) after you power up the system. If it is set to *Enabled*, BIOS will skip some items. By default, this choice is ***Enabled***.

Boot Sequence
This field determines the drive that the system searches first for an operating system. The options are :

A, C, SCSI	D, A, SCSI	SCSI, C, A
C, A, SCSI	E, A, SCSI	C only
C, CDROM, A	F, A, SCSI	LS120, C
CDROM, C, A	SCSI, A, C	

The default value is ***A, C, SCSI***.

Swap Floppy Drive
This item allows you to determine whether to enable the swap Floppy Drive or not. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to ***Disabled.***

Boot Up Floppy Seek
When enabled, the BIOS will seek whether or not the floppy drive installed has 40 or 80 tracks. 360K type has 40 tracks while 760K, 1.2M and 1.44M all have 80 tracks. By default, this field is set to ***Enabled.***

Boot Up NumLock Status
This allows you to activate the NumLock function after you power up the system. By default, the system boots up with ***NumLock*** On.

Security Option
This field allows you to limit access to the System and Setup. The default value is ***Setup***. When you select *System*, the system prompts for the User Password every time you boot up. When you select *Setup*, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

PCI/VGA Palette Snoop
Some display cards that are non-standard VGA may not show colors properly. This field allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When this field is enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

OS Select for DRAM > 64MB
This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is ***NON-OS/2***.

Video BIOS Shadow
This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

C8000 - CBFFF Shadow/DC000 - DFFFF Shadow
Shadowing a ROM reduces the memory available between 640KB to 1024KB. These fields determine whether optional ROM will be copied to RAM or not.

Chipset Features Setup

This Setup menu controls the configuration of the Industrial CPU Card chipset.

ROM PCI/ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE INC.

DRAM Timing	: 70ns	** System Hardware Monitor *	
System BIOS Cacheable	: Disabled	CPU Warning Temperature:	70°C/158°F
Video BIOS Cacheable	: Disabled	Current CPU Temperature:	37°C/98°F
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1	Current System Temp.	
Memory Hole At 15M-16M	: Disabled	Current CPU Fan Speed	
PCI 2.1 Compliance	Disabled	Current Chassis Fan Speed	
		VIO: VCORE:	
		+12V: +5V:	
		-5V: -12V:	
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

DRAM Timing
The DRAM timing is controlled by the DRAM Timing Registers. The timing type is dependent on the system design. Slower rates may be required in some system designs to support loose layouts or slower memory.

System BIOS Cacheable
Select ***Enabled*** allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video BIOS Cacheable
Select Enabled allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

8 Bit I/O Recovery Time
This field allows you to select the recovery time allowed for 8 bit I/O. By default, this field is set to ***1 Clock***.

16 Bit I/O Recovery Time
This field allows you to select the recovery time allowed for 16 bit I/O. By default, this field is set to ***1 Clock***.

Memory Hole at 15M-16M
In order to improve performance, certain space in memory can be reserved for ISA cards. This field allows you to reserve 15MB to 16MB memory address space to ISA expansion cards. This makes memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. By default, this field is set to ***Disabled.***

PCI 2.1 Compliance
Concurrent PCI allows multiple PCI transfers from the PCI master buses to memory to CPU. By default, this field is set to ***Enabled***.

CPU Warning Temperature
The onboard hardware thermal sensor monitors CPU temperature changes and prevents the CPU from overheating. Alert is sounded through the speaker and CPU speed slows down when the temperature exceeds the temperature set in the BIOS until the temperature falls below a safe level. By default, this field is set to ***70°C/158°F***.

Temperature/Fan Speeds/Voltages
These read-only fields show the current CPU temperature, speeds in RPM (revolution per minute) for the CPU fan and chassis fan, and current voltages in the voltage regulators and power supply as monitored by the hardware monitoring IC.

Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn off video display after a period of inactivity.

ROM PCI/ISA BIOS (2A59IM29)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Disabled	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ3 [3-7, 9-15],NMI	: Enabled
Video Off Method	: DPMS	Primary IDE 0	: Disabled
Video Off After	: Suspend	Primary IDE 1	: Disabled
Doze Mode	: Disabled	Secondary IDE 0	: Disabled
Standby Mode	: Disabled	Secondary IDE 1	: Disabled
Suspend Mode	: Disabled	Floppy Disk	: Disabled
HDD Power Down	: Disabled	Serial Port	: Enabled
Soft-off by PWR-BTTN	: Instant-off	Parallel Port	: Disabled
PWR On by Modem/LAN	: Enabled	ESC : Quit	↑ ↓ → ← : Select Item
Resume by Alarm	: Disabled	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Power Management

This field allows you to select the type of power saving management modes. There are fours selections for Power Management.

Disable	No power management. (Default)
Min. Power Saving	Minimum power management.
Max. Power Saving	Maximum power management. Only available for SL CPU.
User Define	Each of the ranges are from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min.

PM Control by APM

This field allows you to use the Advanced Power Management device to enhance the Max. Power Saving mode and stop the CPU's internal clock. If the Max. Power Saving is not enabled, this will be preset to NO.

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank	Default setting, blank the screen and turn off vertical and horizontal scanning.
DPMS	Allows the BIOS to control the video display card if it supports DPMS.
Blank Screen	This option only writes blanks to the video buffer.

Video Off After
This field specifies the mode after which the Video Off feature is enabled. The options are *Doze, Standby, Suspend,* and *N/A.*

Doze Mode
When enabled, and after the set time of system inactivity, the CPU clock will run at a slower speed while all other devices still operate at full speed.

Standby Mode
When enabled, and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode
When enabled, and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down
When enabled, and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWR-BTTN
This field defines the power-off mode when using an ATX power supply. The Instant-Off mode allows powering off immediately upon pressing the power button. In the *Delay 4 Sec* mode, the system powers off when the power button is pressed for more than four seconds or places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity. The default value is ***Instant-Off***.

Resume by Alarm
This allows the system to be turned on automatically through the timer set in the BIOS to make the system more scheduleable. By default, this field is set to ***Disabled***.

PWR On by Modem/LAN
This allows the system to be powered on through a modem or network. By default, this field is set to ***Disabled***.

Reload Global Timer Events

This section determines the reloading of the 'timers' after entering the Full On You can enable or disable the monitoring of IRQ 8 (Real Time Clock) so it does not awaken the system from Suspend mode.

PNP/PCI Configuration

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

ROM PCI/ISA BIOS
PNP/PCI CONFIGURATION
AWARD SOFTWARE INC.

PNP OS Installed			: Yes	Used MEM base addr	: N/A
Resources Controlled by			: Manual		
Reset Configuration Data			: Disabled		
IRQ-3	assigned	to	: Legacy ISA		
IRQ-4	assigned	to	: Legacy ISA		
IRQ-5	assigned	to	: PCI/ISA PnP		
IRQ-7	assigned	to	: Legacy ISA		
IRQ-9	assigned	to	: PCI/ISA PnP		
IRQ-10	assigned	to	: PCI/ISA PnP		
IRQ-11	assigned	to	: PCI/ISA PnP		
IRQ-12	assigned	to	: PCI/ISA PnP		
IRQ-14	assigned	to	: Legacy ISA		
IRQ-15	assigned	to	: Legacy ISA		
DMA-0	assigned	to	: PCI/ISA PnP		
DMA-1	assigned	to	: PCI/ISA PnP	ESC : Quit	↑ ↓ ← : Select Item
DMA-3	assigned	to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-5	assigned	to	: PCI/ISA PnP	F5 : Old Values	(Shift) F2 : Color
DMA-6	assigned	to	: PCI/ISA PnP	F6 : Load BIOS Defaults	
DMA-7	assigned	to	: PCI/ISA PnP	F7 : Load Setup Defaults	

PNP OS Installed
This field allows you to specify if the operating system installed in your system is plug and play aware.
Note: Operating systems such as DOS, OS/2, and Windows 3.x do not use PnP.

Resources Controlled by
This PnP BIOS can configure all of the boot and compatible devices automatically. However, this capability needs you to use a PnP operating system such as Windows 95. The default value is ***Manual.***

Reset Configuration Data
This field allows you to determine whether to reset the configuration data or not. The default value is ***Disabled.***

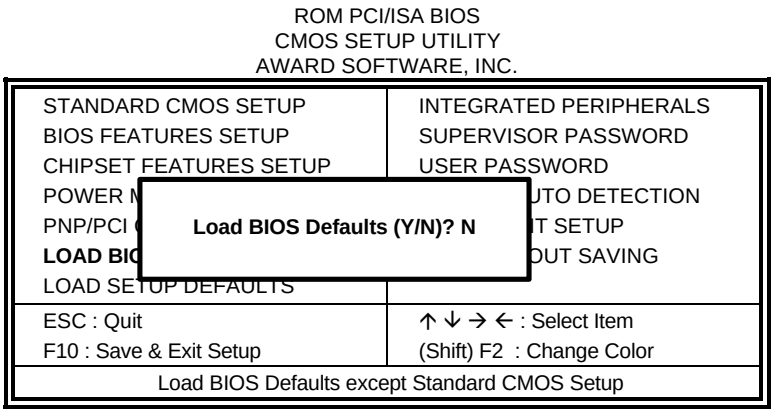
IRQ, DMA assigned to
These fields allow you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot.

Used MEM base addr

This field allows the user to set the base address and block size of a legacy (non-PnP) ISA card that uses any memory segment within the C800H and DFFFH address range. If the you have such a card and are not using an ICU (ISA Configuration Utility) to specify its address range, select a base address from the six available options. During selection, the "Used MEM Length" field will appear with the block size options. If you have more than one legacy ISA card in your system that require the use of this address range, you can increase the block size to either 8K, 16K, 32K or 64K. If you are using ICU to accomplish this task, leave "Used MEM base addr" to its default setting of **N/A**.

Load BIOS Defaults

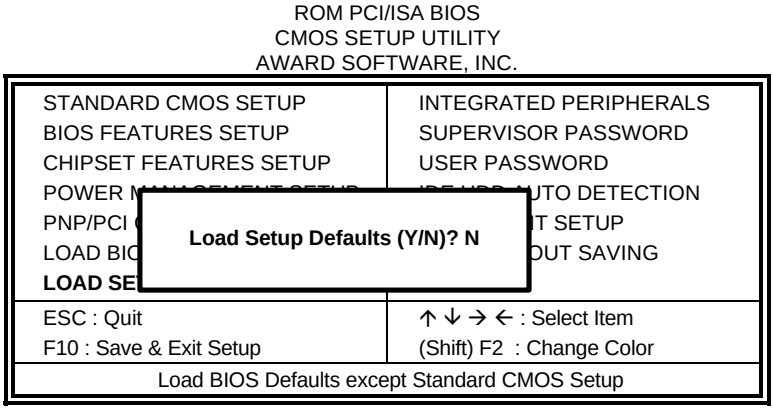
This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.



To load BIOS defaults value to CMOS SRAM, enter "Y". If not, enter "N".

Load Setup Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.



To load SETUP defaults value to CMOS SRAM, enter "Y". If not, enter "N".

Integrated Peripherals

This option allows you to determine your hard disk configuration, mode and port.

ROM PCI/ISA BIOS
INTEGRATED PERIPHERALS
AWARD SOFTWARE INC.

IDE HDD Block Mode	: Enabled	Onboard FDD Controller	: Enabled
IDE Primary Master PIO	: Auto	Serial Port 1	: Auto
IDE Primary Slave PIO	: Auto	Serial Port 2	: Auto
IDE Primary Master UDMA	: Auto	UART Mode Select	: Standard
IDE Primary Slave UDMA	: Auto	Onboard Parallel Port	: 378H/IRQ7
IDE Secondary Master PIO	: Auto	Parallel Port Mode	: SPP
IDE Secondary Slave PIO	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
		ESC : Quit	↑↓ ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

IDE HDD Block Mode
This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

IDE Primary Master/Slave PIO And Secondary Master/Slave PIO
These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary Master/Slave UDMA And Secondary Master/Slave UDMA
This field allows your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

On-Chip Primary/Secondary PCI IDE
These fields allow you either to enable or disable the Primary/Secondary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

USB Keyboard Support
This field allows your system to support a USB keyboard.

Onboard FDD Controller
This option allows you to select the onboard FDD port.

Onboard Serial/Parallel Port
These fields allow you to select the onboard serial/parallel port and its address. The default value for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3
Parallel Port	378H/IRQ7

UART Mode Select
This field determines the UART 2 mode in your computer. The options are *Standard*, *HPSIR*, and *ASKIR*.

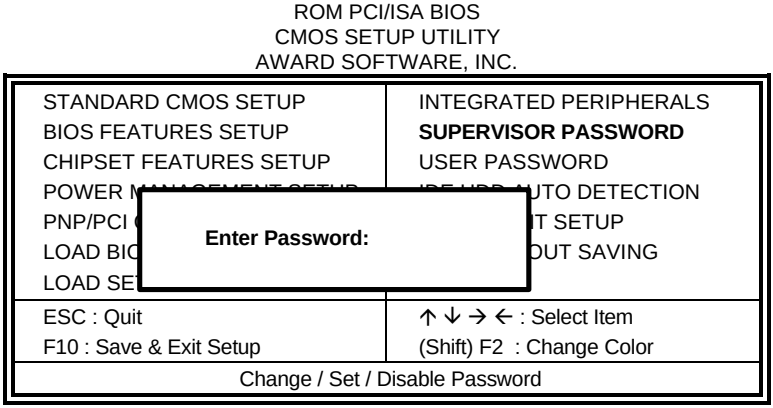
Onboard Parallel Mode
This field allows you to determine parallel port mode function.

SPP	Standard Printer Port
EPP	Enhanced Parallel Port
ECP	Extended Capabilities Port
ECP+EPP	Extended Capabilities Port or Enhanced Parallel Port

Supervisor / User Password

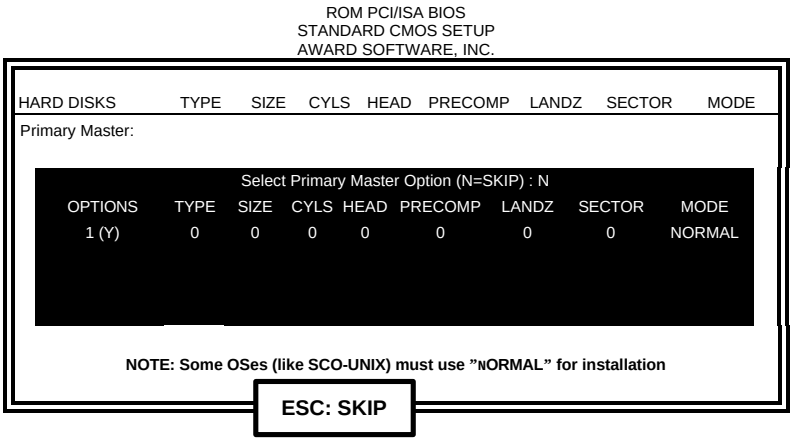
These two options set the system password. *Supervisor Password* sets a password that will be used to protect the system and Setup utility. *User Password* sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The **Enter Password:** message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.



IDE HDD Auto Detection

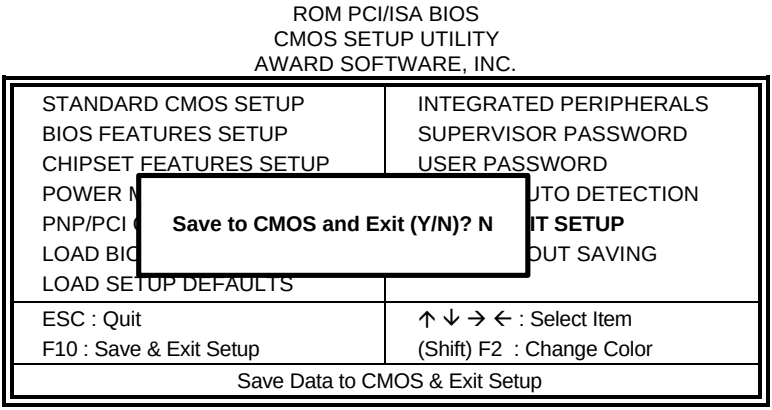
This option detects the parameters of an IDE hard disk drive, and automatically enters them into Standard CMOS Setup screen.


ROM PCI/ISA BIOS
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master:
Select Primary Master Option (N=SKIP) : N
OPTIONS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
1 (Y) 0 0 0 0 0 0 0 NORMAL
NOTE: Some OSes (like SCO-UNIX) must use "NORMAL" for installation
ESC: SKIP

Up to four IDE drives can be detected, with parameters for each appearing in sequence inside a box. To accept the displayed entries, press the "Y" key; to skip to the next drive, press the "N" key. If you accept the values, the parameters will appear listed beside the drive letter on the screen.

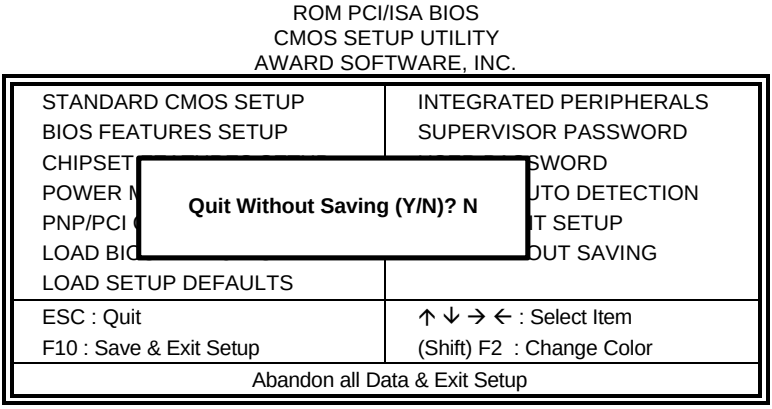
Save & Exit Setup

This option allows you to determine whether to accept the modifications or not. If you type "Y", you will quit the setup utility and save all changes into the CMOS memory. If you type "N", you will return to Setup utility.



Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing "Y" will quit the Setup utility without saving the modifications. Typing "N" will return you to Setup utility.



4

VGA Driver Installation

This chapter provides information on how to install the VGA drivers that come in the floppy diskette with your PC-586U(PC) card. Please follow the instructions set forth in this chapter carefully. Please note that there must be relevant software installed in your system before you could proceed to install the VGA drivers. It is recommended that you make a copy of the VGA driver diskette and put the backup copy in a safe place.

The following items are covered in this chapter:

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Driver Installation..... 66
Installing the Drivers for Windows NT 4.0..... 67
Driver Installation..... 67

Installing the Drivers for Windows 95

Driver Installation

The following section describes the normal display driver installation procedures for Windows 95. Use the following procedures when installing the display drivers for Windows 95.

1. Click Start, then Settings, then Control Panel.
2. Double click on "Display".
3. Select the "Settings" page, click the "Change Display Type" button.
4. Click the "Change" button in the "Adapter Type" area.
5. Click the "Have Disk" button and press "OK".
6. Specify the path to the new driver and press <ENTER>:

Example 1: Insert the drivers disk in the A: floppy drive, and enter A:\win95.

Example 2: Type in the name of the directory where you copied the drivers, either on your local hard drive or on a network share.

Example 3: If you're not sure exactly where the drivers are, choose the "Browse..." button to find them.

7. The "Select Device" dialog box will appear. Select the adapter that corresponds to the one you installed in your machine and click OK.
8. Windows 95 will copy the display drivers to the proper directories on your system.
9. Continue choosing Close until asked to restart your machine from the "Systems Settings Change" dialog box.
10. After the system has restarted, you can go back into the Display applet and select alternate screen resolutions and color depths.

Installing the Drivers for Windows NT 4.0

Driver Installation

Once you are in the Windows NT 4.0 environment, follow the procedures below to install the VGA drivers in the diskette that comes with your CPU card.

1. Click the Start button, then go to Settings and click on Control Panel.
2. Click on the Display icon to start the Display Properties window.
3. Click on the Settings tab, and then click on Display Type.
4. In the Change Display Type window, click on Change in Adapter Type. This will bring up the Select Device Window.
5. In the Change Display window, click on Have Disk. Follow the directions on the screen to supply the directory where the Windows NT driver files are located. Then select OK, or press ENTER.
6. Select Chips Video Accelerator from Display list provided, then click OK or press ENTER.
7. You will then see a warning panel about Third Party Drivers. Click on Yes to finish the installation.
8. Once the installation is complete, the system must be shut down and restarted for the new drivers to take effect.
9. When the system has restarted, the default graphics mode (usually 640x480x256color) has been automatically selected. Click the Start button, then go to Settings and click on Control Panel. Click on the Display icon to start the Display Properties window. Click on the Settings tab. A new screen setting can be selected using either of the following methods:
   A. Use the slide-bar in the Desktop Area to select new setting.
   B. Click on List All Modes. From the list provided, select a new setting, then click OK or press ENTER.
   C. Click on Test to test the newly selected graphics mode. Follow the instructions given on the screen. A test screen should appear, followed by the Testing Mode window. Click on Yes to continue. Click on Apply to switch to the new graphics mode. Graphics modes are changed dynamically on NT 4.0, so you do not need to shut down and restart for the new screen settings to work.

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5

LAN Driver Installation Guide

This chapter describes LAN features and driver installation of the onboard Realtek 8139A Ethernet controller.

The following items are covered in this chapter:

Introduction 70
Features 70
Software Drivers Support 70
Installing LAN Driver for Win98/Windows2000 71
Installing LAN Driver for Windows 95 72
Installing LAN Driver for Windows NT 73
Installing LAN Driver for DOS 74
Installing Driver for Windows for Workgroups 75

Introduction

Realtek 8139A is a 32-bit 10/100MBps Ethernet controller for PCI local bus-compliant PCs. It supports the bus mastering architecture, and Auto-negotiation feature which make it possible to combine one common type of Ethernet cabling – an RJ-45 connector for twisted-pair cabling that can be used for both 10Mbps and 100Mbps connection. Extensive driver support for commonly used network operating systems is also provided.

Features

- Conforms to the Ethernet IEEE 802.3u standard
- Compatible with PCI Local Bus Revision 2.1 specification
- IEEE 802.3u Auto-Negotiation for automatic speed selection
- Supports Full-Duplex/Half-Duplex Operation
- Provides 32-bit bus mastering data transfer
- Supports 10Mbps and 100Mbps operation in a single port

Software Drivers Support

Novell network drivers:
  Workstation for DOS ODI Client / OS/2 ODI Client
  Server Driver for NetWare 3.11, 3.12, 4.0, 4.1X, 5.0
  Client 32 for Windows 95
IBM network drivers:
  LAN Server for OS/2 2.3, 4.0
Microsoft network drivers:
  Microsoft Network Client for DOS, LAN Manager Workstation/Server, Windows for Workgroups v3.11, Windows NT 3.5, 3.51 & 4.0, Windows 95 & OSR2, Windows 98 & Windows 2000
UNIX network drivers:
  SCO UNIX 4.X, 5.X
Other Network Operating System Information
  Packet Driver, LANtastic 6.0 with NDIS driver

The following section describes the installation driver procedure for Windows 98/Windows 2000, Windows 95, Windows NT, DOS, and Windows for Workgroup. To view the procedure of other operating systems, execute the ***help8139.exe*** in the diskette supplied.

Installing LAN Driver for Win98/Windows2000

This section describes the procedure to install Windows 98 and Windows 2000 driver for Realtek RTL8139 PCI Fast Ethernet adapter.

Before you start with the installation process, make sure that your adapter is properly installed in the PCI bus slot.

Executing Win98/Windows2000 will auto-detect your system configuration and find the adapter hardware. (If Win98/Windows2000 does not prompt that it detects the PCI Ethernet adapter, there must be something wrong with the Realtek RTL8139 PCI Fast Ethernet adapter or your system environment.)

1. When asked to select the driver you want to install, select "Driver from disk provided by hardware manufacturer".
2. Insert the Realtek RTL8139 driver disk into drive A and specify the setup file pathname A:\.
3. Win98/Windows2000 will appear with a message to insert Win98/Win2000 system disk to complete setup.
4. Win98/Windows2000 will finish other installation procedure automatically, and ask you to restart the system.

Installing LAN Driver for Windows 95

This section describes the procedure to install Windows 95 driver for Realtek RTL8139 PCI Fast Ethernet adapter.

Before you start with the installation process, make sure that your adapter is properly installed in the PCI bus slot. Executing Windows 95 will auto-detect your system configuration and find the adapter hardware. (If Win95 does not prompt that it detects the PCI Ethernet adapter, there must be something wrong with the RTL8139 PCI Fast Ethernet adapter or your system environment.)

1. When asked to select the driver you want to install, select "Driver from disk provided by hardware manufacturer".
2. Insert the Realtek RTL8139 driver disk into drive A and specify the setup file pathname A:\.
3. Windows 95 will appear with a message to insert Windows 95 system disk to complete setup.
5. Windows 95 will finish other installation procedure automatically, and ask you to restart the system.

Installing LAN Driver for Windows NT

This section describes the procedure to install Windows NT v3.5, v3.51 & v4.0 driver for Realtek RTL8139 PCI Fast Ethernet adapter.

When you are in Windows NT :

1. In the Main group of Windows NT, select the "Control Panel" icon.
2. In the Control Panel window, choose the "Network" icon.
3. In the Network Settings dialog box, choose the "Add Adapter" button. The Add Network Adapter dialog box appears.
4. In the list of network cards, select "<other> Requires disk from manufacturer", and then press <Enter> button.
5. Insert the Realtek driver disk in drive A, enter drive and pathname A:\ which is the path where the setup file OEMSETUP.INF is located, and then choose the OK button.
6. The screen will appear "Select Line Speed" dialog box which is provided by RTL8139.SYS driver. The default value is "auto" so that the RTL8139 PCI Fast Ethernet adapter and its driver RTL8139.SYS will auto-detect the line speed, 10 Mb or 100Mb, while the RTL8139.SYS is loading. The other values, "10" or "100", are only used when you want to force RTL8139 PCI Fast Ethernet adapter to 10Mb or 100Mb.
7. The screen will appear "Input EthernetID" dialog box which is provided by RTL8139.SYS driver. This option is only required when you have more than one Realtek RTL8139 PCI Fast Ethernet adapters on the computer. Select "SKIP" if only one adapter installed on the computer.
8. "Bus Location" display in the next screen. Your machine contains more than one hardware bus, please select the Bus Type and Bus number on
9. NT will then perform the binding process. If any additional network software options were installed, you may be prompted for specific information for these packages.
10. Restarting your system you will require network service.

Installing LAN Driver for DOS

Before you start with the installation procedure, make sure that the adapter is properly installed and configured. Similarly, Make sure that your Microsoft Network Client is properly installed. (If not, The installation utility SETUP.EXE is located on Microsoft Network Client v3.0 for MS-DOS Disk. Run SETUP.EXE from Disk and the SETUP program screen will appear. Follow the instructions. The options are specific to your needs. The installation procedure will transfer files to a specific directory on the client and modify existing configuration files to fit your specific needs.)

1. Change to the Microsoft Network Client subdirectory, and run SETUP.EXE
2. The screen will display some information. Press <Enter>.
3. Respond to the screen prompts, selecting "Change Network Configuration", then press <Enter>.
4. Move the highlight to "Add Adapter", press <Enter>.
5. Select "Network adapter not shown on list below ...".
6. Insert the Realtek RTL8139 driver diskette in floppy A, and specify the pathname A:\NDIS2DOS, then press <Enter>.
7. Follow the screen instructions to complete the process. Simply pressing <Enter> for each screen display will select the default options. Press <Enter> until you reach the display prompting you to reboot the system.

Installing Driver for Windows for Workgroups

This section describes the procedure to install Microsoft Windows for Workgroups v3.11 driver for REALTEK RTL8139 Fast Ethernet adapter.

1. When installing Windows for Workgroups, you are prompted for a network driver. Select the "Unlisted or Updated Network Driver".
2. Insert the REALTEK adapter driver disk containing OEMSETUP.INF and RTSND.DOS files.
3. Specify the directory for the driver (A:\WFW311) and select the Adapter driver.
4. Select Advanced options, and make sure the parameters match the card settings. Check keyword "EtherID", which is provided by RTSND.DOS. The installation program copies the necessary files and creates PROTOCOL.INI for use with the adapter.

Existing Windows for Workgroups Installation:

1. Select the "Network Setup" icon in the Network Group.
2. Select the "Driver.." button.
3. Select the "Add Adapters.." button.
4. Select "Unlisted or Updated Network Adapter"
5. Insert the adapter driver disk with OEMSETUP.INF and RTSND.DOS and specify the path A:\WFW311.
6. Select the REALTEK adapter driver.
7. The installation program copies the necessary files and creates PROTOCOL.INI for use with the adapter.
8. Select "Close" and when prompted, restart the computer for changes to take affect and complete the installation.

NOTE: You must have a terminated cable attached to the adapter when you start Windows for Workgroups. If you don't, Windows for Workgroups hangs.

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SCSI Driver Installation Guide

This chapter serves as an installation guide to the onboard SCSI interface on your CPU card. It contains important information to ease the installation and configuration process.

With the SCSI interface, you can connect SCSI peripherals such as hard disk drives, scanners, CD-ROM drives and tape drives.

Topics covered in this chapter include:

Installing SCSI Driver for DOS..... 78
Installing SCSI Driver for Windows 95/98..... 79
Driver Installation for Windows-NT..... 81
Installing SCSI driver for OS/2 3.X & 4.X..... 83

Installing SCSI Driver for DOS

The DOSSETUP.EXE program installs the 16bit ASPI drivers, SCSI CD-ROM driver and the Microsoft CD extensions. This program will automatically create or modify the AUTOEXEC.BAT and CONFIG.SYS files on your hard drive. To complete CD-ROM installation, you will need MSCDEX.EXE pre-installed on the hard drive or on a floppy disk. MSCDEX.EXE is on MS-DOS 6.2x Setup Disk Number One. Be sure that you know the location and the path of MSCDEX.EXE prior to running DOSSETUP.EXE. The hard drive will need MS-DOS 6.xx installed or it will need to be formatted with the /s option (i.e. - bootable format) prior to running Initio DOSSETUP.EXE. From the x:\ DOS prompt type "DOSSETUP" and press "enter". NOTE: x = drive letter of floppy drive used. After DOSSETUP.EXE completes, be sure to reboot system so changes take effect.

Installing SCSI Driver for Windows 95/98

Files you need:
Information script files for installation: INIA100.INF.
Miniport device driver: INIA100.MPD.

Installation:
A: New Windows 95 installation:
B. Adding INI-A100U2W to an existing Windows 95/98:
C. Updating device driver:

A: New Windows 95/98 installation:
1. Run SETUP.EXE from the Windows 95/98 CD-ROM and follow the directions on the screen.
2. After a Windows 95/98 session is established, select "My Computer/Control Panel/System/Device Manager/Other devices/PCI SCSI Bus Controller" from the Windows 95/98 desktop.
3. Click the "Driver" tab, then click the "Change Driver" tab.
4. Double click "SCSI controllers", then click the "Have Disk" button.
5. At the prompt, type in "A:\win95", insert Initio INI-A100U2W driver disk 1, and click the "OK" button.
6. Select "Initio INI-A100U2W Host Adapter", click the "OK" button. Windows 95 will copy INIA100.MPD to your hard disk. Reboot to complete the driver installation.

B. Adding INI-A100U2W to an existing Windows 95:

1. Install the Initio hardware as described in the User Manual/User Guide. Windows 95 will detect the presence of a new hardware.

2. When Windows 95 displays the following:

New Hardware Found
PCI SCSI Bus Controller
Select which driver you want to install for your new hardware:
* Driver from disk provided by hardware manufacture
OK Cancel Help

Click "OK".

3. Windows 95 will then display the following:

Install From Disk Insert the manufacturer's installation disk into the drive selected, and then click OK Copy manufacturer's files from A:\WIN95

Insert the Initio disk 1 into drive A: and Click "OK".

Windows 95 will interpret INIA100.INF script files and load INIA100.MPD driver to win95/system/iosubsys directory.

4. Windows 95 will then display the following:

System Settings Changed To finish setting up your new hardware, you must restart your computer. Do you want to restart your computer now? Yes No

Remove the diskette from drive A: and Click "Yes".

C. Updating device driver:

1. From the Windows 95 desktop, select "My Computer/Control Panel/System/Device Manager/SCSI Controller/Initio INI-A100U2W Host Adapter".
2. Click "Driver" tab, and then click "Change Driver" tab.
3. Type "A:\win95" and insert Initio INI-A100U2W driver disk into floppy drive A:, click "OK", Windows 95 will copy the new device driver into the hard disk.

Driver Installation for Windows-NT

Files you need:

Script files for installation: txtsetup.oem, oemsetup.inf, disk1.
Device driver: INIA100.SYS

Installation:

A: Install Windows-NT on a hard drive from the INI-A100U2W SCSI Host adapter.

1. If you are installing Windows-NT from a floppy drive, locate the Windows-NT Disk 1 for floppy Installation. Make a backup copy of this diskette.
2. If you are installing Windows-NT from a CD-ROM drive, locate the, Windows-NT Setup Disk for CD-ROM Installation. Make a backup copy of this diskette.
3. Put the disk into drive A and turn on your computer.
4. Follow the instructions, and select "CUSTOM SETUP".
5. Select "OTHER" from the list of "Additional SCSI Adapters". A message will appear on the screen stating that, "Requires disk provided by a hardware manufacturer". Insert the diskette containing INI-A100U2W device driver and press ENTER.
6. Windows-NT will interpret the txtsetup.oem and oemsetup.inf script files and load INIA100.SYS driver to xxx/system32/drivers directory.

B: Adding or Updating the Initio driver to an existing Windows-NT 4.0 booted from IDE drive or different type of host adapter:

1. Establish a Windows-NT session.
   - Select CONTROL PANEL from within the MY COMPUTER group.
   - Select SCSI ADAPTERS from within the CONTROL PANEL group.
2. Select the DRIVERS tab from within the SCSI ADAPTERS group:
   - In the DRIVERS window, select "ADD...".
3. In the INSTALL DRIVER window, select "HAVE DISK...".
4. In the INSTALL FROM DISK window that is displayed, enter the Initio Driver path name:
   - Insert INI-A1000U2W Driver Disk 1 into drive A:
   - Type: A:\WINNT, select "OK"

5. Select INITIO INI-A100U2W Host Adapter, select "OK" to install the INIA100.SYS driver onto your hard disk drive.
6. In the WINDOWS NT SETUP window that is displayed, enter the Initio Driver path name to continue:
   - Type:A:\WINNT, select "CONTINUE"
7. This completes updating the Host Adapter Driver. Follow the on-screen directions to restart your computer and activate the new driver.
8. It is highly recommended that you verify your Windows NT device driver has been properly installed by selecting MY COMPUTER from the desktop. Then select CONTROL PANEL:
   - Select SCSI ADAPTERS from within the CONTROL PANEL group
   - Highlight INITIO INI-A100U2W SCSI HOST ADAPTER from within the SCSI ADAPTERS listing, and select PROPERTIES. If "This device is working properly" is displayed in the Device status box, the driver has been correctly installed.

C: Floppyless SETUP

If you are running WINNT.EXE or WINNT32.EXE to install or upgrade Windows NT, when system reboot and screen turn black with the text "Setup is inspecting your computer's hardware configuration...",
You have two seconds to press 'F6' key to enter the DRIVER INSTALL SCREEN, this is the time to insert Initio Windows NT installation diskette, and type "A:\WINNT" to load the INI-A100U2W Windows NT driver.

Installing SCSI driver for OS/2 3.X & 4.X

I) Installation procedures for INI-A100u2W OS/2 3.X & 4.X device driver:

A) Installed as a secondary controller

1) Open the OS/2 System Folder.
2) Open the System Setup Folder.
3) Double-click "Device Driver Install".
4) Insert the Initio installation diskette into your floppy drive.
5) Change to the OS/2 directory.
6) Choose INIA100.ADD, then click INSTALL.
7) After installation is done, OS/2 will report the status.

B) Installed as a primary controller

1) Make backup copies of the OS/2 Diskette 1.
2) Copy the INIA100.ADD onto OS/2 Diskette 1.
3) Modify the config.sys file on Diskette 1 to add
   BASEDEV=INIA100.ADD /V
4) Install OS/2 using the backup Diskette 1

II) Driver configuration options:

/V	Verbose mode provides detail information about driver when driver is initialized
/!V	Non Verbose mode (default)
/ET	Driver assumes that all targets have more than one LUN (default)
/!ET	Driver assumes that all targets only have LUN 0
/Q:x	Specifies maximum number of tag commands per target
/!Q	No tag command
/B:(d,dd),.	Scan devices only on PCI BUS d, DEVICE dd
/B:d	Scan all the devices on the PCI BUS d
/T:xxxx	Target enable mask WORD (Default scan all targets)
/A:d	Adapter IDs are assigned based on BIOS address and then PCI device address
/DM:d,..	Enable direct access storage device (DASD) support on target d
/!DM:d,..	Disable DASD manager support on target d
/SM:d,..	Enable SCSI manager support on target d
/!SM:d,..	Disable SCSI manager support on target d

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Intel PIIX Bus Master IDE Driver Installation

This chapter describes the installation procedure for Intel PIIX Bus Master IDE Drivers for Windows 95.

This chapter contains the following sections:

System Requirements 86
Installing the Software 87

System Requirements

This section describes system requirements for the PIIX Bus Master IDE Device Driver for Windows 95*. This driver has been designed for and tested with Windows 95 only. This driver will only install on systems with Windows 95.

1. The system must contain a supported Intel processor and chipset configuration.
2. Ensure that a mouse is connected to the system.
3. One of the following versions of Windows 95* must be installed on the system prior to running utility program.

   Windows 95* 4.00.950 (Retail)
   Windows 95* 4.00.950a (OSR1)
   Windows 95* 4.00.950b (OSR2 without USB Supplement)
   Windows 95* 4.00.950b (OSR2.1 with USB Supplement)
4. This utility should only be used on desktop systems. The utility must not be executed on notebook or portable systems with or without dock.
5. It is assumed that the BIOS properly initialized the 82371xB IDE interface for Bus Master IDE operation.
6. There are no other non-82371xB IDE controllers (add-in IDE controller or sound card with IDE) enabled on the system.

Installing the Software

This subsection describes how to install the software on a system where Windows 95 is installed.

NOTE: Record the location of the Windows 95* directory before installing the driver.

1. Check the System Requirements. Windows 95* must be fully installed and running on the system prior to running this software.
2. Close any running applications.
3. Remove references to installed real-mode IDE device drivers in the AUTOEXEC.BAT and CONFIG.SYS files (especially any drivers that control ATAPI CD-ROM and special IDE features). Use the Notepad utility to do this.

The driver files are stored in an integrated application setup program. This program is a Windows 95* program that allows the driver files to be INSTALLED or DE-INSTALLED.

Execute the driver setup program.

Run SETUP.EXE.

4. Click 'Next' on Welcome Screen to read and agree to the license agreement. View the text file and choose File\Exit to close Notepad and continue. NOTE: If you click 'No', program will terminate.
5. Click 'Yes' if you agree to continue. NOTE: If you click 'No', the program will terminate.
6. Select 'INSTALL', to install the PIIX Bus Master IDE Device Driver when prompted to do so.

NOTE: If the driver is currently installed on the system, SETUP will ask you whether or not you want to continue. Follow the prompts on the screen to Install the driver if desired.

7. Click 'OK' to restart the system when prompted to do so.
8. Follow the screen instructions and use default settings to complete the setup when Windows 95* is re-started. Upon re-start, Windows 95* will display that it has found an Intel PCI Bus Master IDE controller hardware and is installing hardware for it.

If a "New Hardware Found" dialog box is displayed requesting the location of the drivers, use the mouse to click on the scrollbar and click on the <Windows 95* directory>\System\IOSubSys path:
For example:
Click on 'C:\WINDOWS\SYSTEM\IOSUBSYS\'
Click 'OK'.

9. Select 'Yes', when prompted to re-start Windows 95.

NOTE: After installation, the following driver and related files are stored as listed.

<Windows 95* directory>\System\IOSubSys\IDEATAPI.MPD
<Windows 95* directory>\System\IOSubSys\PIIXVSD.VXD
<Windows 95* directory>\INF\IDEATAPI.INF

Appendix

A. I/O Port Address Map
B. Interrupt Request Lines (IRQ)

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. There are a total of 1K port address space available. The following table lists the I/O port addresses used on the Industrial CPU Card.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
294h - 297h	Hard Ware Monitor Device (W83781D)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

B. Interrupt Request Lines (IRQ)

There are a total of 15 IRQ lines available on the Industrial CPU Card. Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on the Industrial CPU Card.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Parallel Port #2
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Software Redirected to Int 0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	Reserved
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

CONTEC Group

JAPAN : Headquarters

CONTEC Co., LTD.
3-9-31, Himesato, Nishiyodogawa-ku, Osaka 555-0025, Japan
Tel : +81 (6) 6477-5219 Fax : +81 (6) 6477-1692
E-mail : intsales@osaka.contec.co.jp

U.S.A. : CONTEC MICROELECTRONICS U.S.A. INC.
744 South Hillview Drive. Milpitas, CA 95035 U.S.A.
Tel : +1 (408) 719-8200 Fax : +1 (408) 719-6750
E-mail : tech_support@contecusa.com

EUROPE : CONTEC MICROELECTRONICS EUROPE B.V.
Binnenweg 4, 2132 CT, Hoofddorp, The Netherlands
Tel : +31 (23) 567-3030 Fax : +31 (23) 567-3035
E-mail : tech_support@conteceu.nl

KOREA : HYOJIN CONTEC Co., LTD.
KI-IM Bldg. #399, Shindolim-Dong, Kuro-ku, Seoul 152-070, Korea
Tel : +82 (2) 2636-4277/8 Fax : +82 (2) 2636-4279
E-mail : product@conteck.com

CHINA : INTERNATIONAL CONTEC TECHNOLOGY CO., LTD.
B-8F, Hua Tong Building, No. B19, Che Gong Zhuang West Road,
Hai Dian District, Beijing 100044, China
Tel : +86 (10) 8801-8228 Fax : +86 (10) 8801-8209
E-mail : ict@ict.com.cn

SHANGHAI CONTEC MICROELECTRONICS CORPORATION.
No. 481, Gui Ping Road, Cao He Jing, Hi-Tech Park, Shanghai 200233, China
Tel : +86 (21) 6485-1907 Fax : +86 (21) 6485-0330
E-mail : contec@contec.com.cn

SHENYANG CONTEC MICROELECTRONICS Co., LTD.
No. 169, Qingnian Street, Shenhe District, Shenyang 110015, China
Tel : +86 (24) 2392-9771 Fax : +86 (24) 2392-9773

TAIWAN : MACROMATE CORP.
8F, Universal Center, No.179, Sec.1, Ta-Tung Road, Hsi-Chih, Taipei Hsien, Taiwan R.O.C.
Tel : +886 (2) 2647-9353 Fax : +886 (2) 2647-9373
E-mail : intl@macromate.com.tw